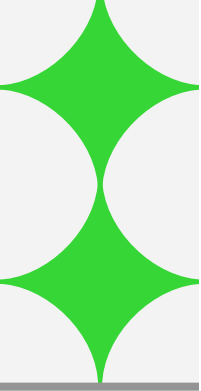




SRI KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY

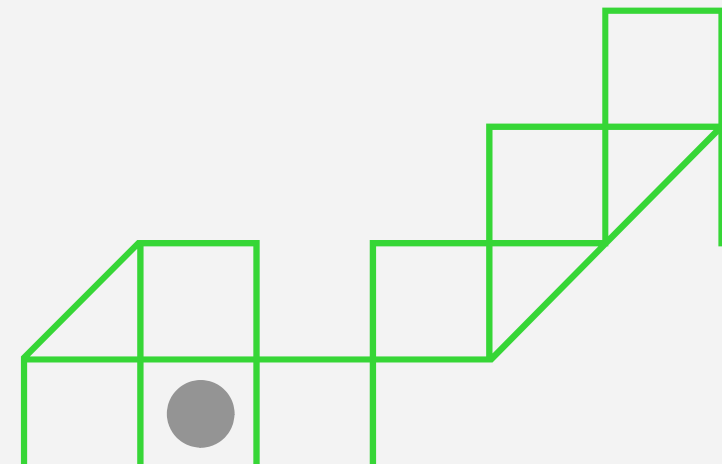


APPLICATION OF OPERATION RESEARCH

NAME : SREESANTH C

REGISTER.NO : 727723EUIT238

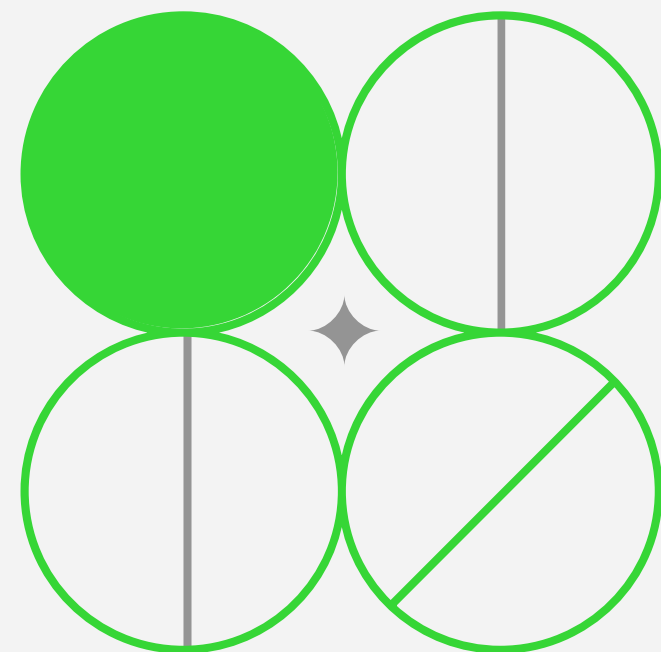
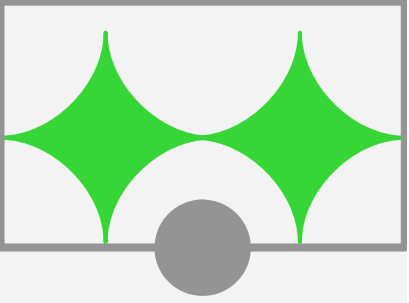
CLASS : IT-D





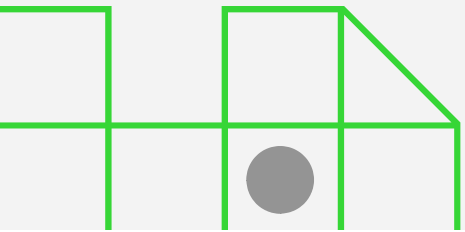
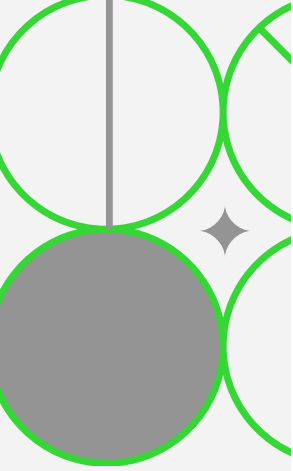
Introduction

Welcome to the world of *Operations Research* (OR), where we optimize solutions using mathematical models and **analytical methods**. This presentation will explore the diverse applications of OR in various industries and decision-making processes.



Linear Programming

Utilizing **linear optimization** to maximize or minimize a given objective function subject to linear equality and inequality constraints. This method is widely used in resource allocation, production planning, and supply chain management.



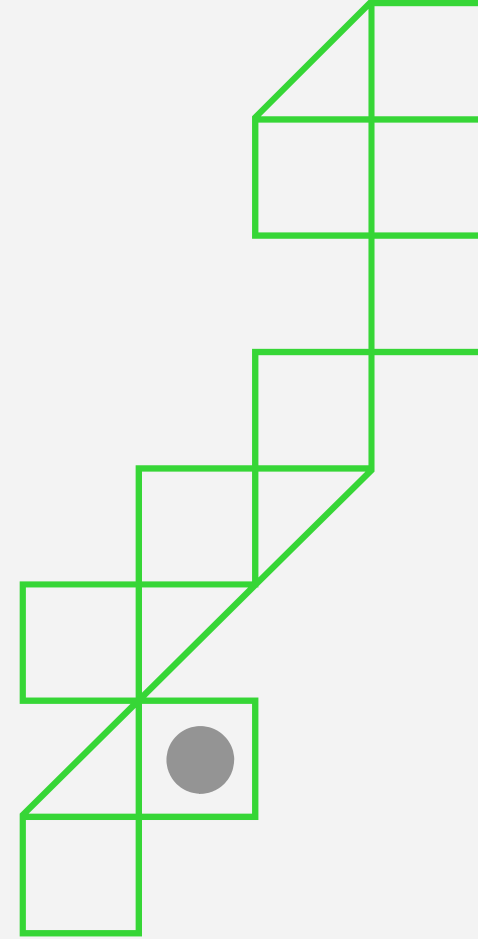
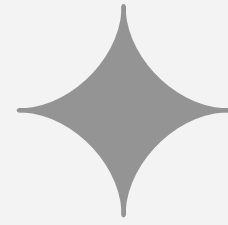
INTEGER PROGRAMMING

Addressing problems with **discrete decision variables** through the use of integer optimization. This method is crucial in solving real-world problems such as project scheduling, facility location, and vehicle routing.



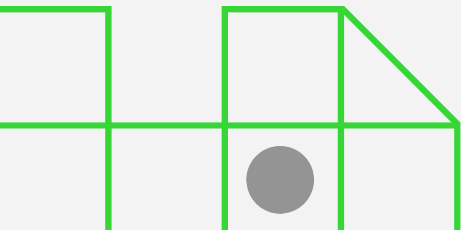
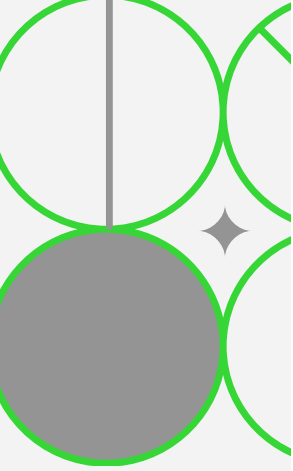
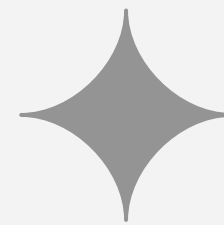
Simulation Modeling

Applying **stochastic models** to mimic real-world systems and analyze their behavior under different scenarios. Simulation modeling is instrumental in risk analysis, queuing systems, and performance evaluation.



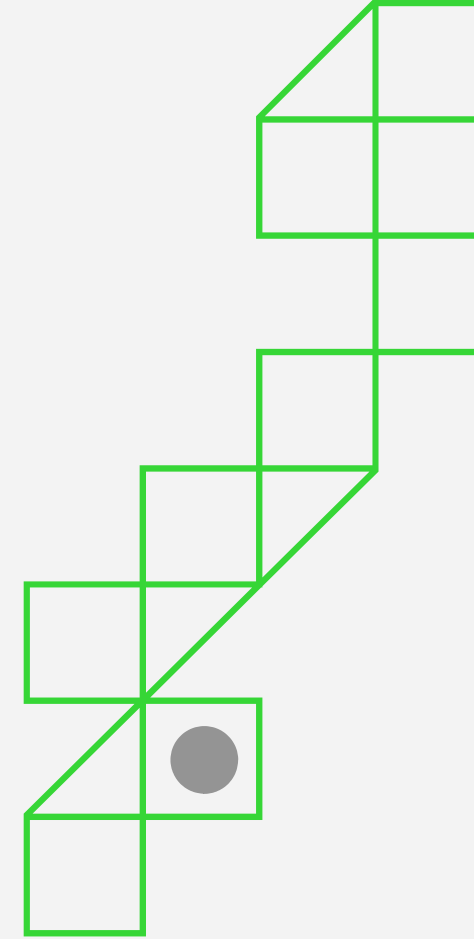
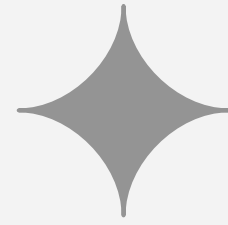
Decision Analysis

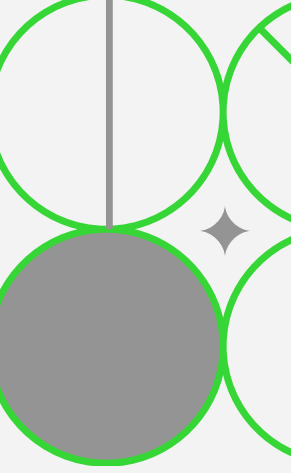
Utilizing **probabilistic models** to make informed decisions under uncertainty. Decision analysis plays a critical role in risk management, investment strategies, and project selection.



Optimal Control Theory

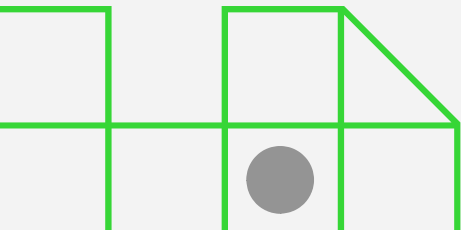
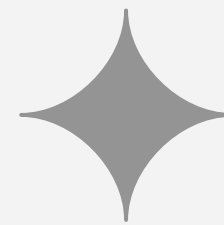
Leveraging **dynamic optimization** to determine the best control strategy for dynamic systems over time. This theory is essential in fields such as engineering, economics, and environmental management.





Applications in Healthcare

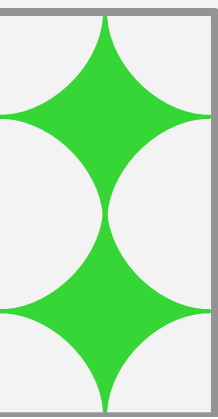
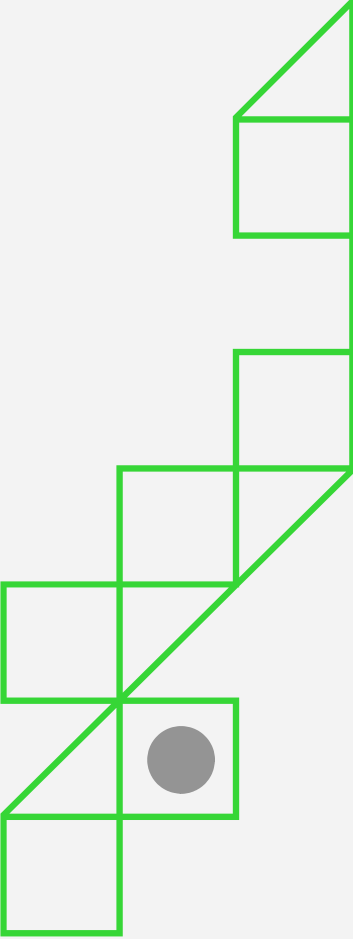
Applying OR techniques to improve healthcare operations, such as optimizing hospital resource allocation, staff scheduling, and patient flow management. OR plays a vital role in enhancing healthcare efficiency and patient care.

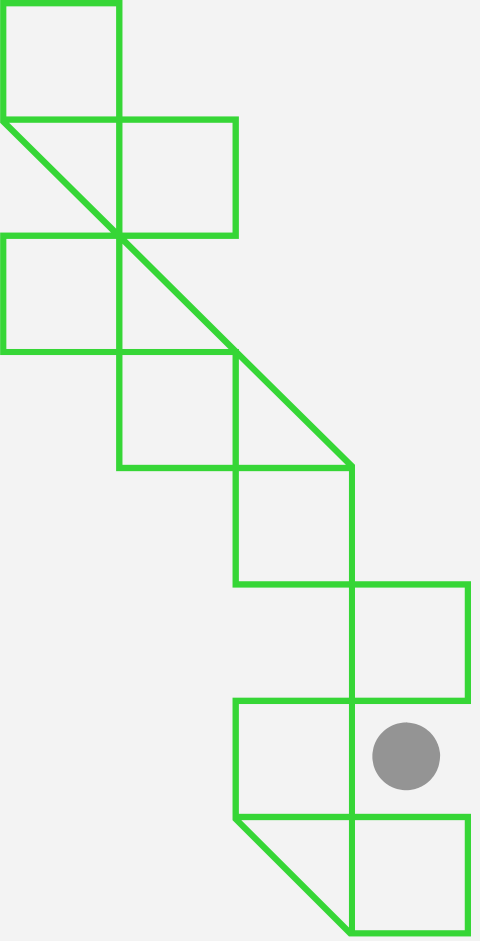




CONCLUSION

In conclusion, Operations Research offers a versatile toolkit for optimizing solutions across diverse industries and decision-making processes. By leveraging mathematical models and analytical methods, OR continues to drive efficiency, innovation, and informed decision-making in today's complex world.





Thanks!

